Basavraj Chinagundi

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Education

- **Thapar Institute of Engineering and Technology** — Patiala, India
  Bachelor of Engineering - Electronics and Communications Engineering — *Aug 2019 - July 2023*
  Courses: *Operating Systems, Data Structures and Algorithms, Machine Learning, Networking, Databases*

Skills Summary

- **Languages**: Python, C++, HTML, CSS, JavaScript, SQL, Matlab , Latex
- **Frameworks**: TensorFlow 2, Keras, Pytorch, Scikit, NLTK, SpaCy, Flask, NodeJS
- **Tools**: GIT, MySQL, OpenCV
- **Platforms**: Linux, Web, Windows, Arduino, Raspberry, ,Nvidia Jetson Xavier NX, IBM Cloud

Experience

- **Government of India** — On-site
  Computer Vision Intern — *July 2021 - Dec 2021*
  - **Vision based Security Monitoring System**: Developed a automated UAV tracking system in prohibited regions
  - **Integration**: Deployed Yolov5 model on Nvidia Jetson Xavier NX for accelerated detection.
  - **Night Vision**: Generated dataset for enabling detections during night using IR Feed
- **Charles University** — Remote
  NLP Research Intern — *May 2021 - Dec 2021*
  - **Identifying hate and offensive speech**: Using different embedding methods and Machine Learning Algorithms
  - **Transformer based Architecture**: Fine-tuning transformer based models for classification tasks
  - **Designing Neural Networks**: Creating custom pipelines for diverse NLP problems on GLUE benchmark

Projects

- **hushVoice**: A vision based sign language recognition chatbot AI assistant that aims at helping deaf and mute people to be able to have same service access as normal users.
  Tech: HTML, CSS, IBM Cloud, React, TensorFlow 2, SSD Mobilenet V2
- **Counter Drone System**: Complete Security System for detection of drones in prohibited defence regions.
  Tech: Python, yolov5, Pytorch, Nvidia Jeston Xavier NX, Arduino, OpenCV.
- **Hate and Offensive Speech Detection**: Developing transformer based hate and offensive speech detector for tweets and social media comments.
  Tech: Python, TensorFlow 2, Keras, Pytorch, Scikit, NLTK, SpaCy, Glove, tf-idf, BERT, Roberta , ERNIE 2.0
- **SEMG Classifier**: Using Ensembled Machine Learning for classifying movement associated with the knee muscle, gait, leg extension from a sitting position, and flexion of the leg up for regular and abnormal sEMG data.
  Tech: Python, Scipy, Scikit, PyCaret
- **DSM**: Forecasting loads for Demand-side management (DSM) programs consisting of the planning, implementation, and monitoring activities of electric utilities which are designed to encourage consumers to modify their level and pattern of electricity usage.
  Tech: Python, ARIMA, Prophet, LSTMs
- **Cement Strength**: Improving cement strength predictions using CTGAN and Anomaly removal techniques.
  Tech: Python, CTGAN, Anomaly Detection, PyCaret
- **Piccauto**: An web application where you can simply generate a dataset that you require using keyword search which is matched using embedding pretrained model for improving downloads based on image recognition
  Tech: HTML, CSS, Flask, yolov4, google-image-search
- **Thyroid Multivariate**: Using Feature Engineering techniques to build a model for classifying type of binding protein.
  Tech: Python, Numpy, Pandas, Scikit
- **MultiThreading RGB Converter**: Creating a multithread script for converting RGB images to BW for comparing procesing speed on n number of threads.
  Tech: Python, multiprocessing, OpenCV

- **Visdrone**: Custom Object Detection model on VisDrone2021 dataset for 11 classes
  Tech:Python, OpenCV, yolo
- **dodgeChat**: An socket based chat application where you can where you can chat with other users in the same room.
  Tech: HTML, CSS, Javascript, NodeJS, WebSockets
- **muZip**: An web based app where you can simply download your favourite artist's music any song or album in just one click.
  Tech: HTML, CSS, Python, Flask, youtube-search, pytube

Publications

- **Classification of Hate, Offensive and Profane content from Tweets using an Ensemble of Deep Contextualized and Domain Specific Representations**: To be published in CEUR proceedings of The Forum for Information Retrieval Evaluation(FIRE 2021) conference.
  Tech: Python, TensorFlow 2, Keras, Pytorch, Scikit, NLTK, SpaCy, Glove, tf-idf, BERT, Roberta , ERNIE 2.0
- **Enhancing the Detection of abnormalities in knee movement using Anomaly Removal Techniques**: In Process.
  Tech: Python, Scipy, Scikit, PyCaret
- **PugNet: A CNN Architecture to predict the Gender and Age of Blackbuck using Pugmarks**: In Process.
  Tech: Python, OpenCV, Tensorflow, Keras
- **Estimation of muscle force using forecasting methods** : Draft.
  Tech: Python, Tensorflow, Keras, ARIMA, Prophet, LSTMs
- **Robust Machine Learning model for prediciton of compressive strength and sustainable self-compacting concrete made with waste foundry sand**: Draft.
  Tech:Python, CTGAN, Anomaly Detection, PyCaret

Honors and Awards

- **Inter DPS National Computer Science Festival**:
  Winner of 2016 Computer Science Fest for developing a website themed on Digital India initiative competing against 45 other schools across the country

Volunteer Experience

- **Project Lead at Developer Student Clubs TIET** — Patiala, India
  Planning and coordinating team objectives and priorities to develop hybrid systems. — *Sep 2021 - Present*
- **Executive Member at Microsoft Learn Student Chapter** — Patiala, India
  Organized events, Monitor daily operations and enhance processes to maximize efficiency — *Aug 2021 - Present*